

WHAT IS CLAIMED IS:

1. A plasma display apparatus for displaying images in gradation while dividing one field into a plurality of subfields each including a set-up period, an address period and a sustain period, comprising:

an AC plasma display panel formed with a plurality of scan electrodes and a plurality of sustain electrodes, an electrode array comprised of two scan electrodes and two sustain electrodes arrayed in this order being one unit, a plurality of priming electrodes each opposed to an adjacent scan electrode, and a plurality of data electrodes extending in such a direction as to cross the scan electrodes and the sustain electrodes,

first driving means for adjusting wall charges of the scan electrodes and the sustain electrodes, between which sustain discharges were generated in the previous subfield, during each set-up period,

second driving means for, during each address period, applying write pulses to the scan electrodes having the wall charges thereof adjusted by the first driving means to generate priming discharges between the scan electrodes and the priming electrodes, and applying write pulses to the data electrodes to generate write discharges utilizing the priming discharges, and

third driving means for, during each sustain period, causing sustain discharges to be generated between the scan electrodes caused to generate the write discharges by the second

driving means and the sustain electrodes to accumulate positive charges in the scan electrodes and negative charges in the sustain electrodes after the sustain discharges,

wherein the first driving means replaces parts toward the sustain electrodes of the positive charges in the scan electrodes accumulated by the third driving means by negative charges and replaces parts toward the scan electrodes of the negative charges in the sustain electrodes accumulated by the third driving means by positive charges.

2. A plasma display apparatus according to claim 1, wherein the third driving means makes the pulse duration of the last sustain pulses applied to the scan electrodes shorter than those of other sustain pulses.

3. A plasma display apparatus according to claim 1, wherein the first driving means applies set-up pulses for vertical synchronization applied once during a vertical synchronization period at a first voltage to the sustain electrodes at least when the display apparatus is turned on, and applies the set-up pulses for vertical synchronization thereto at a second voltage lower than the first voltage in other cases.

4. A plasma display apparatus according to claim 1, wherein the third driving means causes the discharges to be generated between the scan electrodes and the priming electrodes by the last sustain pulses applied to the scan electrodes during each sustain period, thereby adjusting the wall charges of the

priming electrodes.

5. A plasma display apparatus according to claim 1, wherein:

the first driving means keeps the voltages of the priming electrodes at a first voltage during each set-up period,

the second driving means increases the voltages of the priming electrodes to a second voltage higher than the first voltage and keeps them at the second voltage before the write discharges are generated during each address period, and

the third driving means reduces the voltages of the priming electrodes from the second voltage to the first voltage during each sustain period.

6. A plasma display apparatus according to claim 1, wherein the first driving means causes the discharges to be generated between the scan electrodes and the priming electrodes before the discharges between the scan electrodes and the sustain electrodes to adjust the wall charges of the priming electrodes during each set-up period.

7. A plasma display apparatus according to claim 6, wherein:

the first driving means reduces the voltages of the priming electrodes from a first voltage to a second voltage lower than the first voltage and keeps them at the second voltage before the discharges between the scan electrodes and the sustain electrodes during each set-up period, and

the second driving means increases the voltages of the priming electrodes from the second voltage to the first voltage and keeps them at the first voltage before the generation of the write discharges during each address period.

8. A plasma display apparatus according to claim 1, wherein the plasma display panel includes light absorbing layers formed at positions opposed to the priming electrodes.

9. A plasma display apparatus according to claim 1, wherein the first driving means sets the set-up period given once during the vertical synchronization period to be longer than the other set-up periods.

10. A plasma display apparatus according to claim 1, wherein the second driving means increases the voltages of the priming electrodes to a predetermined voltage after increasing the voltages of the scan electrodes whose wall charges were adjusted by the first driving means to another predetermined voltage during each address period.

11. A method for driving a plasma display apparatus for displaying images in gradation while dividing one field into a plurality of subfields each including a set-up period, an address period and a sustain period, the apparatus comprising an AC plasma display panel formed with a plurality of scan electrodes and a plurality of sustain electrodes, an electrode array comprised of two scan electrodes and two sustain electrodes arrayed in this order being one unit, and a plurality

of priming electrodes each opposed to an adjacent scan electrode, comprising:

an adjusting step of adjusting wall charges of the scan electrodes and the sustain electrodes, between which sustain discharges were generated in the previous subfields, during each set-up period,

a writing step of, during each address period, applying write pulses to the scan electrodes having the wall charges thereof adjusted in the adjusting step to generate priming discharges between the scan electrodes and the priming electrodes, and applying write pulses to the data electrodes to generate write discharges utilizing the priming discharges, and

a sustaining step of, during each sustain period, causing sustain discharges to be generated between the scan electrodes caused to generate the write discharges in the writing step and the sustain electrodes to accumulate positive charges in the scan electrodes and negative charges in the sustain electrodes after the sustain discharges,

wherein the adjusting step includes a step of replacing parts toward the sustain electrodes of the positive charges in the scan electrodes accumulated in the sustaining step by negative charges and replacing parts toward the scan electrodes of the negative charges in the sustain electrodes accumulated in the sustaining step by positive charges.